## SEQUENCE LISTING

	<110	15 4	OriGene Technologies, Inc														
	<120		OriGene Technologies, Inc BREAST CANCER TRANSCRIPTION FACTOR GENE AND USES														
			BREAST CANCER TRANSCRIPTION FACTOR GENE AND USES 16U 107 R1														
	<130		16U 107 R1														
	<160																
			PatentIn version 3.1														
	<210 <211 <212 <213	L> / 2> 1	1 4372 DNA Homo sapiens														
	<220> <221> CDS <222> (78)(1922) <223>																
c400> 1   cagteetega ecceegeae etegeceett ecceaecee teeteegeet eggtgeeegg 60															60		
,==9	:			gacca													110
Ham. 9.19.	:					Met :	Thr I	Met A	_	Ser 1	Ala V	Val I	Phe 1	-	Ala A 10	Ala	
Cr. 10 cont.	Ala	gcc Ala	cct Pro	gcc Ala 15	ggc Gly	ggc Gly	aat Asn	cct Pro	gag Glu 20	cag Gln	cga Arg	ctg Leu	gac Asp	tac Tyr 25	gag Glu	cgg Arg	158
157 S	gct Ala			ctg Leu													206
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	His	ttc Phe 45	ctc Leu	ccc Pro	cgg Arg	cac His	cgt Arg 50	aag Lys	ctc Leu	aag Lys	gag Glu	ccg Pro 55	ggg Gly	ccc Pro	ccg Pro	ctg Leu	254
15E 3				cag Gln													302
				cgg Arg													350
				agc Ser 95													398
				caa Gln													446
				ccc Pro													494
				gtg Val			-				_			-		-	542
				gcg Ala													590
				cta Leu 175													638

Page 1

				ctg Leu							tgg	aag	agt		agg	686
				ggg Gly												734
				cag Gln												782
				ctg Leu 240												830
				acg Thr												878
				aag Lys												926
cag Gln																974
att Ile	aaa Lys	ctg Leu	gag Glu	tgc Cys	cag Gln 305	ccg Pro	gag Glu	ctt Leu	tcc Ser	gag Glu 310	aca Thr	tcc Ser	cag Gln	act Thr	ctg Leu 315	1022
ect Pro	ccc Pro	aag Lys	ccc Pro	ttc Phe 320	tca Ser	tgt Cys	Gly ggg	cgg Arg	agt Ser 325	gga Gly	aag Lys	gga Gly	cat His	aaa Lys 330	agg Arg	1070
aaa Lys																1118
¶gct Ala	cct Pro	gaa Glu 350	ttt Phe	tca Ser	aaa Lys	gtc Val	aaa Lys 355	aca Thr	aaa Lys	act Thr	cct Pro	aag Lys 360	cac His	tct Ser	cct Pro	1166
att																1214
				caa Gln												1262
				ctc Leu 400												1310
				ttc Phe												1358
				tat Tyr												1406
				gaa Glu												1454
				tca Ser												1502
				gac Asp								Āsp		Asn		1550

				ttg Leu 495													1598
				gag Glu													1646
				gaa Glu													1694
				gga Gly													1742
	cct Pro	gag Glu	cca Pro	gat Asp	gat Asp 560	gtt Val	gaa Glu	agt Ser	ttg Leu	atg Met 565	att Ile	acc Thr	ccc Pro	ttc Phe	ttg Leu 570	cct Pro	1790
fer	Val	Val	Ala	575	Gly	Arg	Pro	Leu	Pro 580	Lys	Leu	Thr	Pro	Gln 585	Asn	Phe	1838
	gag Glu	cta Leu	ccc Pro 590	tgg Trp	ttg Leu	gat Asp	gag Glu	cgt Arg 595	agc Ser	cga Arg	tgc Cys	aga Arg	ttg Leu 600	gag Glu	atc Ile	cag Gln	1886
	aag Lys	aag Lys 605	caa Gln	aca Thr	cct Pro	cac His	cgg Arg 610	acg Thr	tgt Cys	agg Arg	aaa Lys	tag	ctg	gct	ggc		1932
1 <sub>2</sub> ] 12	aaga	aacco	ctg 1	tctt	cagat	a gt	tgta	igcat	gco	catto	cccg	agag	gtggd	cag a	agaco	ctgtat	1992
	atgt	tgaco	ctt 1	tgtc	ctcad	ca ta	atgtt	atca	a cto	eget	gata	atad	cccti	tc a	atact	tcctt	2052
		tttgt	tt i	tcati	tacto	ct ga	attto	cacaa	a aaa	actc	tttc	atto	egget	caa 1	ttgt	gagtta	2112
Ļ	tgga	agggt	ga	ttgg	gatti	c ti	ttco	cttt	ttt	ggga	aaat	ggg	ctcto	caa q	gctaa	aagcta	2172
= = :   = = :	tago	gatgo	jca (	gatto	cagaa	ag ti	tcaç	ggggt	cto	gttt	ctat	acat	ttg	ect a	atgtt	aaagg	2232
11.	ggta	aaaa	ggg (	ctcto	cttca	at ta	agaca	tgt	g gaa	agato	gaag	cago	ccct	tc o	cttta	agagct	2292
	gtgo	cctgo	cat o	ggcad	ctcti	tc to	cacco	tggt	: aca	accct	tcct	tata	agtg	ggt a	atagt	gattt	2352
	ttaa	accct	aa a	aataa	aaaca	aa ad	caaco	ctcac	cat	gago	cttt	agga	acca	gaa q	gagga	aatgac	2412
	aagt	gaaq	gcg a	atgaa	agcaa	ag co	catct	tcad	aga	agtag	gaaa	agad	catco	gga q	gagtt	ggtag	2472
	ataa	actgt	ct	gaaaa	agata	ag t	gtto	attt	gaa	acta	attc	tgtg	gatao	cag t	tcato	gtggga	2532
																gctcaa	2592
				-	_	_	=			-	_	-		_		agctgt	2652
					_				_			_		-		gtatc	2712
	acat	cact	tc 1	tcaaq	gtati	c ct	tcat	tggg	g ctt	cato	cctt	ttag	gcaga	aac 1	tcttq	ggtggt	2772
		-	-	•												gctgg	2832
					_						-					ttgta	2892
					_							_				atcag	2952
		_					-			_					_	aagga	3012
																tcagg	3072
	acta	ttgt	gt q	gaaaa	acaaq	gt ag	gggt	ctaa	a tct	ccta	agaa	ggta				cctta	3132
													Dэ	ma 3			

```
3192
   aagagaatat gtccccagat tattagcact tttagaggag aagccaaggt atgtagggtg
   tgtggctggc ccatcagtgg agcacgaaga gagaatggga taccattgtg ggaagagaag
                                                                        3252
  aaaagttcct caggggcctc ccactgctaa agttttttgt gagatgttga tctgtgcttc
                                                                        3312
                                                                        3372
  ctggatttga cttttaaagg aattattctg gcagcacatg tagtattctt ggatgatctt
  qctqctctta tttctccttt tgtgtgtgtg tgtgtgtgt tgtggctatg ggttttcatt
                                                                        3492
   tgtaactcca tctgcttagg agagtgggct ctctataagg gaacctgctg taaacttcat
  tgcagcaagg atgtagagag aaataggact taattccact aggggctctc atctcacacc
                                                                        3552
  ttaaggagga gatttctaga aaaactgggc cagattttct ttgttctcca tcattttaat
                                                                        3612
  gtggcaggct gttcagtttt cttactctta cctatgtgat atttcttcgt aacgtgtcca
                                                                        3732
   aaaagaaaaa agacccaatc agtgtctctt gactttgttc tttgatccct cagtttcttc
   ttgatttcag catgtgtcgg gttcctaatt ttgggtatga gttagcaaat ttaaccattg
                                                                        3792
   tgtttgtgcc ctacccaggg gactccccag tttctgactt gaagtagact gagaagaatc
                                                                        3852
cacgaggtgc tatctggcca gatttaagta gattctattt ccttggttct ccctctccct
                                                                        3912
   gaggacctct tattttattg teceetette taggttaatt eteetttgat ttgactttgt
                                                                        4032
J
  tgagaaggag gttggacagt agattagcaa agttccaagt gcaaaattac agtgtgttag
  agtgtggggg gaaaattagt cttattttc cctacatggg atacaacact gtgaattcaa
                                                                        4092
ųD
   tottcaactg aaggoodtgo agttotoota aaacatagtt gtttgttttt otttaacaaa
                                                                        4152
  gtttaagcta gtgttaataa attaaaaaaa attgcttgtc tgtctacttc agctttgttt
                                                                        4212
  tatgcccatt tcatattgtt gtctgtgttg taattcataa cttttgatac catttctgat
                                                                        4272
   gtgtaaaatt ggttgtcttg taaatatctt ataaagagtt caattgtaaa taaactattg
                                                                        4332
tggctgttaa aaaaaaaaa aaaaaaaaa aaaaaaaaa
                                                                        4372
Ţ.
<210>
<211>
<212>
         614
         PRT
   <213>
         Homo sapiens
   <400>
  Met Thr Met Arg Ser Ala Val Phe Lys Ala Ala Ala Pro Ala Gly
  Gly Asn Pro Glu Gln Arg Leu Asp Tyr Glu Arg Ala Ala Ala Leu Gly 20 25 30
  Gly Pro Glu Asp Glu Pro Gly Ala Ala Glu Ala His Phe Leu Pro Arg
  His Arg Lys Leu Lys Glu Pro Gly Pro Pro Leu Ala Ser Ser Gln Gly 50 55 60
  Gly Ser Pro Ala Pro Ser Pro Ala Gly Cys Gly Gly Lys Gly Arg Gly 65 70 75 80
   Leu Leu Leu Pro Ala Gly Ala Ala Pro Gly Gln Gln Glu Glu Ser Trp
```

Gly Gly Ser Val Pro Leu Pro Cys Pro Pro Pro Ala Thr Lys Gln Ala 100 105 110

Gly Ile Gly Glu Pro Ala Ala Ala Gly Ala Gly Cys Ser Pro Arg 115 120 125

Pro Lys Tyr Gln Ala Val Leu Pro Ile Gln Thr Gly Ser Leu Val Ala 130 135 140

Ala Ala Lys Glu Pro Thr Pro Trp Ala Gly Asp Lys Gly Gly Ala Ala 145 150 155 160

Ser Pro Ala Ala Thr Ala Ser Asp Pro Ala Gly Pro Pro Pro Leu Pro 165 170 175

Leu Pro Gly Pro Pro Pro Leu Ala Pro Thr Ala Thr Ala Gly Thr Leu 180 185 190

Ala Ala Ser Glu Gly Arg Trp Lys Ser Met Arg Lys Ser Pro Leu Gly

Holy Gly Gly Gly Ser Gly Ala Ser Ser Gln Ala Ala Cys Leu Lys Gln 215 220

Ille Leu Leu Leu Gln Leu Asp Leu Ile Glu Gln Gln Gln Gln Gln Leu 232 225 230 235 240

Gln Ala Lys Glu Lys Glu Ile Glu Glu Leu Lys Ser Glu Arg Asp Thr 245 250 255

Leu Leu Ala Arg Ile Glu Arg Met Glu Arg Arg Met Gln Leu Val Lys
260 265 270

ILys Asp Asn Glu Lys Glu Arg His Lys Leu Phe Gln Gly Tyr Glu Thr 275 280 285

Glu Glu Arg Glu Glu Thr Glu Leu Ser Glu Lys Ile Lys Leu Glu Cys 290 295 300

Gln Pro Glu Leu Ser Glu Thr Ser Gln Thr Leu Pro Pro Lys Pro Phe 305 310 315 320

Ser Cys Gly Arg Ser Gly Lys Gly His Lys Arg Lys Ser Pro Phe Gly 325 330 335

Ser Thr Glu Arg Lys Thr Pro Val Lys Lys Leu Ala Pro Glu Phe Ser

Lys Val Lys Thr Lys Thr Pro Lys His Ser Pro Ile Lys Glu Glu Pro  $355 \hspace{1.5cm} 360 \hspace{1.5cm} 365$ 

Cys Gly Ser Leu Ser Glu Thr Val Cys Lys Arg Glu Leu Arg Ser Gln  $370 \,$   $375 \,$   $380 \,$ 

Glu Thr Pro Glu Lys Pro Arg Ser Ser Val Asp Thr Pro Pro Arg Leu 385 390 395 400

Page 5

Ser Thr Pro Gln Lys Gly Pro Ser Thr His Pro Lys Glu Lys Ala Phe Ser Ser Glu Ile Glu Asp Leu Pro Tyr Leu Ser Thr Thr Glu Met Tyr Leu Cys Arg Trp His Gln Pro Pro Pro Ser Pro Leu Pro Leu Arg Glu Ser Ser Pro Lys Lys Glu Glu Thr Val Ala Arg Cys Leu Met Pro Ser 455 Ser Val Ala Gly Glu Thr Ser Val Leu Ala Val Pro Ser Trp Arg Asp His Ser Val Glu Pro Leu Arg Asp Pro Asn Pro Ser Asp Leu Leu Glu 490 Asn Leu Asp Asp Ser Val Phe Ser Lys Arg His Ala Lys Leu Glu Leu 500 505 510Asp Glu Lys Arg Arg Lys Arg Trp Asp Ile Gln Arg Ile Arg Glu Gln Arg Ile Leu Gln Arg Leu Gln Leu Arg Met Tyr Lys Lys Gly Ile Gln Glu Ser Glu Pro Glu Val Thr Ser Phe Pro Glu Pro Asp Asp Val Glu Ser Leu Met Ile Thr Pro Phe Leu Pro Val Val Ala Phe Gly [L] Arg Pro Leu Pro Lys Leu Thr Pro Gln Asn Phe Glu Leu Pro Trp Leu Asp Glu Arg Ser Arg Cys Arg Leu Glu Ile Gln Lys Lys Gln Thr Pro 600 His Arg Thr Cys Arg Lys <210> <211> 198 <212> PRT <213> Homo sapiens <400> 3 Met Glu Arg Arg Met Gln Leu Val Lys Lys Asp Asn Glu Lys Glu Arg His Lys Leu Phe Gln Gly Tyr Glu Thr Glu Glu Arg Glu Glu Thr Glu

Leu Ser Glu Lys Ile Lys Leu Glu Cys Gln Pro Glu Leu Ser Glu Thr

E in Million

35

Ser Gln Thr Leu Pro Pro Lys Pro Phe Ser Cys Gly Arg Ser Gly Lys 50 60

40

Gly His Lys Arg Lys Ser Pro Phe Gly Ser Thr Glu Arg Lys Thr Pro 65 70 75 80

Val Lys Lys Leu Ala Pro Glu Phe Ser Lys Val Lys Thr Lys Thr Pro 85 90 95

Lys His Ser Pro Ile Lys Glu Glu Pro Cys Gly Ser Leu Ser Glu Thr 100 105 110

Val Cys Lys Arg Glu Leu Arg Ser Gln Glu Thr Pro Glu Lys Pro Arg 115 120 125

First Ser Ser Val Asp Thr Pro Pro Arg Leu Ser Thr Pro Gln Lys Gly Pro 135 140

Ser Thr His Pro Lys Glu Lys Ala Phe Ser Ser Glu Ile Glu Asp Leu 155 160

Pro Tyr Leu Ser Thr Thr Glu Met Tyr Leu Cys Arg Trp His Gln Pro

For Pro Ser Pro Leu Pro Leu Arg Glu Ser Ser Pro Lys Lys Glu Glu

TiThr Val Ala Ser Lys Ala

19!

<210> 4
<211> 616

<212> PRT <213> Mus musculus

<400> 4

Met Thr Met Arg Ser Ala Val Phe Lys Ala Ala Ala Ala Pro Ala Gly  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Asn Pro Glu Gln Arg Leu Asp Tyr Glu Arg Ala Ala Leu Gly  $20 \hspace{1cm} 25 \hspace{1cm} 30$ 

Gly Pro Glu Asp Glu Ser Gly Ala Ala Glu Ala His Phe Leu Pro Arg 35 40 45

His Arg Lys Leu Lys Glu Pro Gly Pro Pro Leu Ala Ser Ser Gln Gly 50 55 60

Gly Ser Pro Ser Pro Ser Pro Ala Gly Cys Gly Gly Lys Gly Arg 65 70 75 80

Gly Leu Leu Pro Ala Gly Ala Ala Pro Gly Gln Gln Glu Ger 85 90 95

Trp Gly Gly Ser Val Pro Leu Pro Cys Pro Pro Pro Ala Thr Lys Gln  $100 \hspace{1.5cm} 105 \hspace{1.5cm} 110 \hspace{1.5cm}$ 

Ala Gly Ile Gly Glu Pro Val Ala Ala Gly Ala Gly Cys Ser Pro 115 120 125

Arg Pro Lys Tyr Gln Ala Val Leu Pro Ile Gln Thr Gly Ser Ile Val 130 135 140

Val Ala Ala Ala Lys Glu Pro Thr Pro Trp Ala Gly Asp Lys Gly Gly 145 150 155 160

Ala Ala Pro Pro Ala Ala Thr Ala Ser Asp Pro Ala Gly Pro Pro Pro 165 170 175

Leu Pro Leu Pro Gly Pro Pro Pro Leu Ala Pro Thr Ala Thr Ala Gly 180 185 190

Thr Leu Ala Ala Ser Glu Gly Arg Trp Lys Ser Ile Arg Lys Ser Pro

E Leu Gly Gly Gly Gly Gly Ser Gly Ala Ser Ser Gln Ala Ala Cys Leu 210 215 220

Lys Gln Ile Leu Leu Gln Leu Asp Leu Ile Glu Gln Gln Gln Gln [] 235 230 235 240

 $_{\mbox{\tiny $\rm I\!\!\! I$}}$  Gln Leu Gln Ala Lys Glu Lys Glu Ile Glu Glu Leu Lys Ser Glu Arg  $_{\mbox{\tiny $\rm I\!\!\! I$}}$  245 250 255

Asp Thr Leu Leu Ala Arg Ile Glu Arg Met Glu Arg Arg Met Gln Leu 260 265 270

المانية Val Lys Arg Asp Asn Glu Lys Glu Arg His Lys Leu Leu Gln Gly Tyr الله 275 280 285

Glu Pro Glu Glu Arg Glu Glu Ala Glu Leu Ser Glu Lys Ile Lys Leu

Glu Arg Gln Pro Glu Leu Cys Glu Thr Ser Gln Ala Leu Pro Ser Lys 305 310 315 320

Pro Phe Ser Cys Gly Arg Ser Gly Lys Gly His Lys Arg Lys Thr Pro  $325 \hspace{1cm} 330 \hspace{1cm} 335$ 

Phe Gly Asn Thr Glu Arg Lys Asn Pro Val Lys Lys Leu Ala Pro Glu

Phe Ser Lys Val Lys Thr Lys Thr Pro Lys His Ser Pro Ile Lys Glu

Glu Pro Cys Gly Ser Ile Ser Glu Thr Val Cys Lys Arg Glu Leu Arg 370 375 380

Ser Gln Glu Thr Pro Glu Lys Pro Arg Ser Ser Val Asp Thr Pro Pro 385 390 395 400

	Arg	Leu	Ser	Thr	Pro 405	Gln	Lys	Gly	Pro	Ser 410	Thr	His	Pro	Lys	Glu 415	Lys
	Ala	Phe	Ser	Ser 420	Glu	Met	Glu	Asp	Leu 425	Pro	Туr	Leu	Ser	Thr 430	Thr	Glu
	Met	Tyr	Leu 435	Cys	Arg	Trp	His	Gln 440	Pro	Pro	Pro	Ser	Pro 445	Leu	Pro	Leu
	Arg	Glu 450	Ser	Ser	Pro	Lys	Lys 455	Glu	Glu	Thr	Val	Ala 460	Arg	Cys	Leu	Met
	Pro 465	Ser	Ser	Val	Ala	Gly 470	Glu	Thr	Ser	Val	Leu 475	Ala	Val	Pro	Ser	Trp 480
:i	Arg	Asp	His	Ser	Val 485	Glu	Pro	Leu	Arg	Asp 490	Pro	Asn	Pro	Ser	Asp 495	Ile
	Leu	Glu	Asn	Leu 500	Asp	Asp	Ser	Val	Phe 505	Ser	Lys	Arg	His	Ala 510	Lys	Leu
	Glu	Leu	Asp 515	Glu	Lys	Arg	Arg	Lys 520	Arg	Trp	Asp	Ile	Gln 525	Arg	Ile	Arg
lem ilim	Glu	Gln 530	Arg	Ile	Leu	Gln	Arg 535	Leu	Gln	Leu	Arg	Met 540	Tyr	Lys	Lys	Lys
ųį.	Gly 545	Ile	Gln	Glu	Ser	Glu 550	Pro	Glu	Val	Thr	Ser 555	Phe	Phe	Pro	Glu	Pro 560
	Asp	Asp	Val	Glu	Ser 565	Leu	Leu	Ile	Thr	Pro 570	Phe	Leu	Pro	Val	Val 575	Ala
	Phe	Gly	Arg	Pro 580	Leu	Pro	Lys	Leu	Ala 585	Pro	Gln	Asn	Phe	Glu 590	Leu	Pro
	Trp	Leu	Asp 595	Glu	Arg	Ser	Arg	Cys 600	Arg	Leu	Glu	Ile	Gln 605	Lys	Lys	His

Thr Pro His Arg Thr Cys Arg Lys 610 615

Page 9